

Customer Services

The MCL accomplishes its goal of technology deployment through project participation, demonstrations, training, and equipment loan. In an effort to reach a maximum number of transportation personnel with significant project findings, evaluation results, and innovative concrete technologies, the MCL provides project reports and published papers in journals and symposia proceedings. Presentations at industry conferences and showcases, such as ACI, PCI, ACPA, and TRB are utilized to further the transfer of these new technologies. MCL staff can also provide speakers, put on specialized workshops, and provide technical assistance.



Tensile bond strength testing of a bonded over asphalt overlay



NHI training course

Contacts

If you are interested in one or more of the services provided by the Mobile Concrete Laboratory, you can contact your FHWA Resource Center, Division Office, or the MCL staff directly:

- Gary Crawford, Project Manager, FHWA, (202) 366-1286.
- Jaqan Gudimettla, MCL Project Engineer, Global Consulting, Inc., (202) 366-1335.
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U.S. Department of Transportation
Federal Highway Administration
Office of Pavement Technology
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FHWA Administrator Victor Mendez being briefed in the Mobile Concrete Laboratory



MCL at a workshop in California.



U.S. Department
of Transportation
**Federal Highway
Administration**



MOBILE CONCRETE LABORATORY



Transferring Advanced Concrete Technology To Our Partners

Mission

Federal Highway Administration's Mobile Concrete Laboratory (MCL) introduces Federal, State, and local transportation personnel to the state-of-the-art concrete technology in materials selection, mixture design, field and laboratory testing, and pavement evaluation. In an effort to bridge the gap between research and the field, the MCL accomplishes this technology transfer in several ways:

- By conducting on-site field testing at construction projects to supplement State highway agency (SHA) testing and to demonstrate new innovative equipment / construction practices.
- By training SHA personnel through "hands-on" experience with new technologies.
- By showcasing equipment and technology at industry conferences, symposia, and SHA facilities to familiarize transportation personnel with state-of-the-art technology.
- By providing an equipment loan program where SHA personnel can borrow equipment for various lengths of time after having been trained in their use by MCL staff.

The current focus of the MCL includes assisting SHA's implementation of the mechanistic-empirical pavement design guide (MEPDG) and nondestructive testing, performance-related specifications (PRS), long life pavements, durability, and sustainability. An active partnership with manufacturers, contractors, industry associations, and academia is central to all of the MCL's activities.



Setup for nondestructive pavement thickness measurement on US30 in Iowa.

Technology

Field demonstrations are performed using a fully equipped mobile concrete testing laboratory that can perform a wide range of concrete tests. These include conventional destructive tests as well as new and innovative nondestructive tests.

Examples of these capabilities are:

Conventional QC Tests:

- Temperature, slump, air content, unit weight
- Strength (compression, flexural, splitting tensile)
- Elastic Modulus and Poisson's Ratio

Nondestructive and In Situ Tests:

- Dowel Bar Alignment
- Pavement Thickness
- Tensile Bond Strength
- Impact Echo
- Ultrasonic Tomography
- Pull Out Strength
- Maturity Testing
- Match Curing

Device to nondestructively measure dowel bar alignment.



Ultrasonic tomography detects reinforcement and internal defects in concrete.



Device to nondestructively measure pavement thickness.



Durability Related Tests:

- Microwave Water Content
- Coefficient of Thermal Expansion
- Rapid Chloride Permeability
- Surface Resistivity
- Calorimetry
- Air Void Analyzer
- HIPERPAV Software
- Aggregate Gradation Software

Air Void Analyzer measures air content, specific surface, and spacing factor in fresh concrete.



Electrical resistivity measurement of concrete.



Coefficient of thermal expansion measurement.

